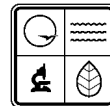




# FACT SHEET



Missouri Department of Natural Resources

*Former Amoco Refinery Update  
Sugar Creek, Missouri*

*September 2000*

The U. S. Environmental Protection Agency (EPA) Region 7 and the Missouri Department of Natural Resources (DNR) are providing this information to the Sugar Creek community on the EPA and DNR's efforts to address contamination at the former refinery, as well as information on how the community can get involved. EPA and DNR intend to provide similar updates on a routine basis.

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## **Cleanup Activities: Present and Future**

### **Ohio and Carlisle Seep**

An additional ground water seep was identified by local citizens in the creek west of the Ohio and Carlisle seep. Both seeps are characterized by iron bacteria. Concerns have been raised that this is a sign of subsurface contamination. As a result, the following actions have and will be taken:

- DNR sampled area in July 1999 and March 2000. The analytical data was submitted to the Agency for Toxic Substance and Disease Registry (ATSDR), and a health threat was not identified.
- DNR and the Department of Geology and Land Survey (DGLS) will be conducting a survey of the occurrence of the iron bacteria in the vicinity of the refinery. Specific timing and scope of the investigation will be determined by DNR and DGLS.
- EPA will conduct independent sampling of the seeps at Ohio and Carlisle and the seep in the creek adjacent to Ohio and Carlisle to determine if more comprehensive sampling is needed.
- If results of initial sampling identify a need for additional investigations, EPA will use the appropriate authorities to address the issue.

Some informative Web sites on iron bacteria are:

<http://pubs.usgs.gov/publications/text/Norrieintro.html>

<http://www.chemtexcorp.com/techtopics/TT-011-0490.html>

<http://www.dnr.state.wi.us/org/water/dwg/febact.htm>

<http://www.groundwatersystems.com/bioprimer.html>

## **Indoor and Outdoor Air Issues**

Concerns have been raised about indoor/basement and outdoor/ambient odors in the community. ATSDR identified the need for indoor air quality data to complete its public health assessment dated March 29, 2000. To address these concerns, the following actions have or will be taken:

- EPA completed two rounds of basement air sampling. The first round of data has been submitted to ATSDR for a health assessment. ATSDR determined that there was no apparent public health hazard to Sugar Creek residents.
- EPA is currently conducting another round of basement air sampling. When completed, the data will be given to ATSDR for review.
- When finished, EPA will have completed approximately 12 weeks of air sampling. This includes both indoor and ambient air sampling.
- EPA responded to two indoor air complaints and installed air sampling devices. The air data was forwarded to ATSDR for review, and ATSDR did not identify a health threat.
- To help respond to future indoor air complaints, EPA provided the Sugar Creek Fire Department with air monitoring equipment. In addition, EPA has provided two training sessions to fire department personnel on equipment use and monitoring techniques.
- DNR responded to more than 20 odor complaints from February to May 2000.
- DNR conducted Fourier Transform Infrared Spectroscopy (FTIR) ambient air sampling in June 2000. These data are currently being reviewed by DNR and will be released in the near future.
- DNR will continue to respond to ambient air complaints.

## **Horizontal Wells**

To remediate ground water in the Norledge plume area, Amoco has proposed a horizontal well system to remove dissolved and free phase product along with soil vapor in the off-site plume area. This technique has been referred to as Enhanced Fluid Recovery (EFR).

- As an initial test, Amoco installed two horizontal wells on its property in October 1999.
- Amoco tested wells and developed a report based on the results. EPA and DNR reviewed the report.
- Based on comments, Amoco will install six additional wells to conduct a complete Phase 1 test. All Phase 1 wells will be on Amoco property.
- Amoco will test the system and prepare a final report on the full Phase 1 test.
- If this system is considered for full implementation, the public will have the opportunity to review and comment on the proposed system.

Some informative Web sites on horizontal wells and EFR are:

[http://www.angelfire.com/biz/horizontal wells](http://www.angelfire.com/biz/horizontal%20wells)

<http://www.epa.gov/superfund/resources/voc/finalapr.pdf>

<http://ost.em.doe.gov/efd/scfa/itsrs/horwell/horwell.pdf>

<http://www.em.doe.gov/plumesfa/intech/isbuhw/index.html>

## **Discharges Into Sugar Creek**

Amoco has a National Pollution Discharge Elimination System (NPDES) permit for stormwater

outfalls to surface waters in Sugar Creek. Oil seeps have also been identified along Sugar Creek where it flows adjacent to the facility boundary.

- EPA and DNR have responded to reports of oil seeps into Sugar Creek and directed Amoco to develop a plan to address the oil seeps into the creek along the site boundary.
- Amoco submitted a plan to address these discharges. Plans include the installation of a recovery trench behind a retaining wall along Sugar Creek and a system of small diameter extraction wells at an area north of the retaining wall. These systems will be installed this fall.
- EPA and DNR toured storm water discharge outfalls, and DNR conducted surface water sampling at specific storm water discharges and seep areas.
- DNR, which administers the NPDES permit program, is revising Amoco's discharge permit to address these concerns. DNR will provide an opportunity for public comment before any permit revisions become final.

## MTBE

Methyl Tertiary Butyl Ether (MTBE) has been detected in groundwater samples collected from two monitoring wells in the Norledge plume area, from a seep on the North Bluff and in a seep in tank dike 156.

- EPA and DNR conducted limited sampling for MTBE in July 1999.
- DNR detected MTBE at a seep on the North Bluffs area in July 1999 at a level of 28.0 parts per billion (ppb). Amoco conducted sampling in off-site wells in June and July 1999. MTBE was included at a limited number of locations. MTBE was not detected in Amoco samples or DNR split samples during this sampling event.
- MTBE was detected in off-site wells in the Norledge area during an MDNR Operations and Maintenance Inspection conducted in January and February 2000. The levels of MTBE detected were 3.1 and 14.6 parts per billion (ppb).
- DNR detected MTBE in an on-site seep in tank dike 156 in March 2000, at a level of 1500 ppb.
- EPA and DNR directed Amoco to include MTBE in future, off-site investigations and during quarterly on and off-site sampling.

Some informative Web sites on MTBE are: <http://www.epa.gov/swrust1/mtbe/index.htm>  
<http://www.epa.gov/ost/drinking/mtbe.pdf> and <http://www.dnr.state.mo.us/mtbe/mtbe.pdf>

### MTBE Information

Although there is no established drinking water regulation for MTBE, EPA has issued a drinking water advisory of 20 to 40 parts per billion (ppb) on the basis of taste and odor thresholds. MTBE has a very unpleasant taste and odor, and these properties can make drinking water contaminated with low levels of MTBE unacceptable to the public. Advisories are not mandatory standards for action. Advisories are used only for guidance and are not legally enforceable. Concentrations in the range of 20 to 40 ppb are approximately 20,000 to 100,000 (or more) times lower than the range of exposure levels in which cancer or non-cancer effects have been observed in studies.

## **Future Community Involvement Opportunities: Public Comment Periods**

EPA expects the Phase 1 test report of the horizontal well system this winter. The Sugar Creek community will have an opportunity to comment on this report by next spring. Also, the community will have an opportunity to comment on the NPDES permit this fall.

## **Upcoming Public Involvement Plan**

A public involvement plan for the Sugar Creek community is being developed. A public involvement plan provides a community-specific plan for interacting with the community on activities at the former refinery. This plan will be located at the Sugar Creek Branch library and will be available in the near future.

## **Information Repository: New Location and New Look**

For the Sugar Creek community's convenience, the site's information repository is located at the Sugar Creek Branch Library, 102 S. Sterling Avenue. The information repository is a collection of documents from EPA, DNR, Amoco, and ATSDR about cleanup-related activities at the former refinery.

EPA added several documents in June 2000. Also, to make the repository more user-friendly and organized, EPA developed an index of its documents. The index, which is housed at the library's information desk, lists the documents by title, date, number, folder number, author, and recipient. EPA will add more documents about the corrective action work to its repository in the near future.

For your information, the Sugar Creek Branch Library's hours of operation are: 11 a.m. to 7 p.m. Monday through Thursday; 11 a.m. to 6 p.m. Friday; and 1 p.m. to 5 p.m. Saturday and Sunday.

## **Additional Information**

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